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No. IV.

BENDING TIN PIPES AND MAKING LAPS.

The SILVER ISIS MEDAL *and* FIVE POUNDS *were presented to Mr. J.* BASSETT, *of Birmingham, for his method of making Laps and of bending Tin Pipes; Models of which have been placed in the Society's Repository.*

THE usual method of making laps, bends, or folds in tin plate is by laying the plate on the edge of the work-bench, and bending it by means of a hammer; but the fold thus made is neither so even, nor at so true an angle as could be wished; and this defect is especially noticeable in the manufacture of lanterns, and such other articles as are composed of several pieces of tin plate, as they can never be made either symmetrical or firm without considerable precision in the bends or folds.

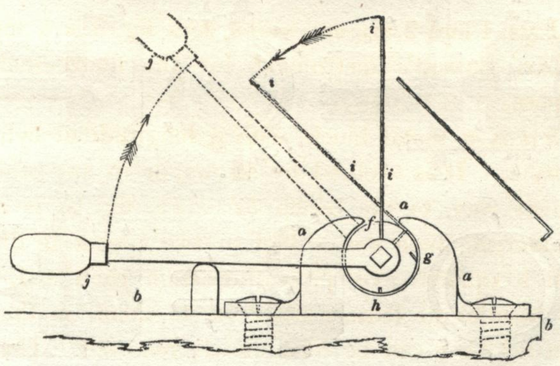
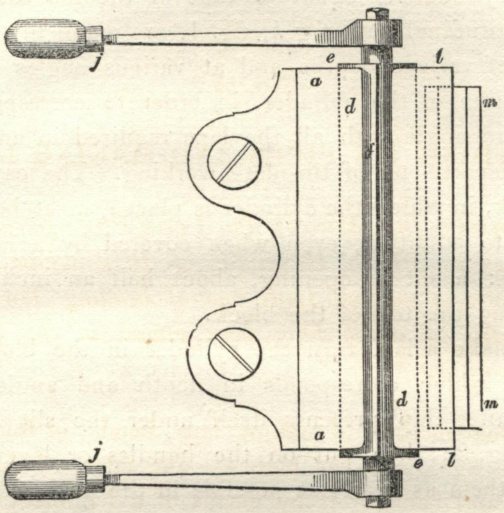
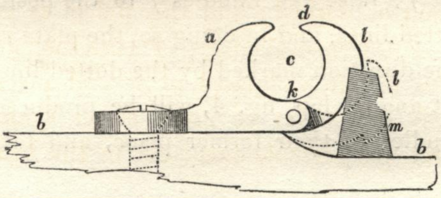


Fig. 1.

Fig. 4.

Fig. 3.





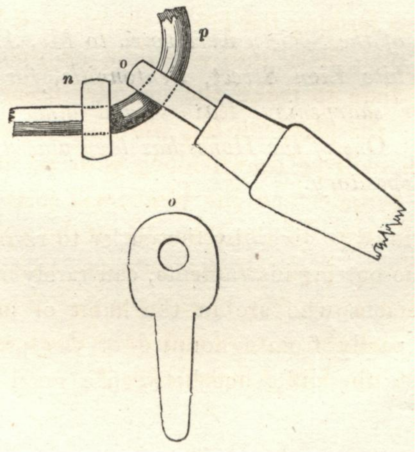
Figs. 1 and 2 are end views, and fig. 3 is a top view of Mr. Bassett's instrument for the above-mentioned purpose.

a a is a metal block, with a longitudinal cylindrical cavity *c*. It is secured by screws, or in any other convenient way, to the bench *b b*. *e e*, fig. 3, is an iron cylinder, an inch and a half or two inches in diameter, with a squared axis projecting from each end, having the handles *j j* loosely fitted on to them, so that when required they can be immediately removed. The length of the cylinder is equal to that of the longest laps; and longitudinal cuts *f g h,* fig. 1, are made in the cylinder, of various depths and at various angles with a tangent-line to the cylinder, in order to correspond in depth and angle with all the laps required in any particular department of tin-plate working. The cavity in the block, in which the cylinder is placed, must be large enough to admit it, even when covered by a layer of tin plate: a slit or opening, about half an inch wide, runs along the top of the block.

To make a lap, turn the cylinder in the block till that cut which corresponds in depth and angle with the required lap presents itself under the slit in the block, fig. 3; then put on the handles or levers, *jj,* keeping them as nearly as possible in the position represented in fig. 1: then put the tin plate *i i* upright in the slit *f;* raise the handles *j* to the position shewn by the dotted lines, and in doing so, the plate *i* will be forced into the direction marked by the dotted lines *i i,* and thus a right-angled lap, fig. 4, will be produced; then bring the handles to their former place, and take out the tin plate.

If, besides forming the lap in the plate, it be required to form the plate itself into a hollow pipe, nothing more is necessary than to make the cylinder describe a complete round; the plate, having previously been cut to a proper width, will be drawn along with it, and passing between the cylinder and the block, will form a straight pipe, equal in bore to the diameter of the cylinder. In order to get the pipe off the cylinder, the handles *jj* must be taken away, the block *m m* figs. 2 and 3, must be removed, and the part *l l* will drop down to the position shewn by the dotted lines in fig. 2.

If an attempt were made to bend an empty tin or copper pipe, by hammering it on the beak of an anvil, the pipe would be more or less compressed at the bend of the angle, and there would likewise be great risk of its cracking across, from the effect of partial straining, or, from the same cause, of the soldered edges ripping out. The compression of the curved part may, however, be prevented, by filling the cavity of the pipe with any suitable material before beginning to bend it: rosin, lead, solder, have each been used for this purpose with success, and the core, after the bending has been finished, is got out by the application of a heat sufficient to melt it. The force required for bending the pipe is generally given by strokes of a hammer carefully applied, or by putting one end of the pipe into a hole in the work-bench, and bending it by pulling at the other. But with all the attention that can be paid, the pipe is so liable to be strained, that sharp curves cannot be ventured on. Mr. Bassett's improvement consists in filling the pipe to be bent with hard solder, which unites firmly with the substance of the pipe; and then putting it *p* through a very thick ring *n* of soft solder, fixed in a vice or



work-bench; a similar ring *o* being put into the end of a handle of suitable length, is to be passed over the pipe, so that the part where the bend is to be shall be between the two rings. Gradual pressure being then made by means of the handle, the pipe yields and bends but cannot break, for the rings yield as well as the pipe; and being of considerably softer material, will give way to any dangerous degree of pressure rather than the pipe; so that bends can thus be made with little risk, much sharper than any prudent workman would attempt by the usual modes. When the tube has been bent, the solder is to be melted out, but enough remains in the joint to secure it.

In treating brass pipes as above, they must be previously tinned inside, in order to secure a perfect union between the tube and the core of solder.

No. V.

SWING HONE.

The Thanks of the Society were voted to Mr. J. FAYRER, of 40, White Lion Street, Pentonville, for his Swing Hone for sharpening Razors and other Articles of Cutlery. One of the Hones has been placed in the Society's Repository.

THE exquisite edge given by the cutler to razors, lancets, and other fine-cutting instruments, can rarely be produced by those persons who are in the habit of using them. This arises partly from ignorance of the properties in which consists the difference between a good and a bad